

Ingersoll Rand

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News Releases: <u>Trane[®] Celebrates a Century of Customer-</u> <u>Driven Innovation at 2013 AHR Expo</u>

<u>Trane[®] Leaders Discuss Innovative Ideas</u> and Real-World Solutions at ASHRAE and <u>SPIDA Conferences</u>

Fact Sheets: <u>Trane[®] Advantage VRF™ Variable</u> <u>Refrigerant System</u>

Trane[®] Intelligent Variable Air Systems

IntelliPak™ I Unitary Rooftop Systems

Trane[®] Series S[™] CenTraVac[™] Chiller

<u>Trane[®] Axiom™ Water Source Heat</u> <u>Pumps</u>

Trane[®] Wireless Comm

Trane[®] High Efficiency Terminal Devices

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Trane[®] Supply

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Trane[®] Displays New Innovations at 2013 AHR Expo



Trane[®] Introduces Innovations, Celebrates 100 Years at AHR 2013



Trane[®] Celebrates a Century of Customer-Driven Innovation at 2013 AHR Expo

Company defines the HVAC industry with 100 years of performance, innovation, commitment and knowledge

<u>Trane</u>, a leading global provider of indoor comfort solutions and services and a brand of <u>Ingersoll Rand</u>, celebrated 100 years of customer-driven innovation at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition, held in Dallas, Jan. 28-30.

The company showcased innovative new products, systems and services; held informative on-site demonstrations, as well as technology-based presentations and special anniversary activities at the AHR Expo.

"For 100 years, Trane has defined the industry by providing heating and air conditioning solutions to help people live, work and play in comfortable environments," said Dave Regnery, president of Trane North America. "As we move into our second century, we are excited to play a leadership role in energy efficiency as we drive the advancement of energy management services and energy conservation. Trane will continue to improve lives by uncovering groundbreaking, efficient ways to improve buildings."

Trane was founded as a family business in 1913 by James Trane and his son, Reuben. Milestone inventions included the convector radiator in 1925 and the pioneering Turbovac in 1939. Today, Trane has grown to become a global leader recognized worldwide as an innovator in the heating, ventilation and air conditioning (HVAC) industry.

Trane will celebrate milestone anniversaries of the following industry-changing innovations in 2013:

- The 75th anniversary of the Trane Centrifugal chiller the world's most reliable, most efficient and quietest chiller
- The 40th anniversary of Trane Trace[™] energy analysis software which compares the energy and economic impact of various energy conservation measures
- The 35th anniversary of Trane Tracer[™] building controls which are available to suit virtually any application for a variety of building types and for both single and multiple building configurations

For more information on Trane historical achievements, visit <u>http://www.trane.com/Commercial/100years/</u>.

New Trane Innovations Showcased at AHR Expo

Trane highlighted seven innovative, customer-driven new solutions at the show that benefit healthcare, education, hospitality, retail, commercial, industrial and data center markets to create comfortable, efficient and productive environments.

Trane® Advantage VRF™ Variable Refrigerant Systems – Trane Advantage VRF variable refrigerant systems — featuring variable-speed compressor technology — offer individualized solutions for improved temperature control and occupant comfort in an energy-efficient package that reduces operating expenses. Variable-speed compressor technology closely matches energy use to the demands of the building, heating and cooling only the areas that require it.

Intelligent Variable Air Systems – Trane® Intelligent Variable Air systems are new, efficient systems for a building's HVAC needs, saving energy, installation costs and time. With new design strategies and optimized controls, this system can deliver 20 to 30 percent better energy efficiency than a traditional variable air volume (VAV) system. Customers can easily monitor efficiency with user-friendly dashboards that help to maintain peak performance for the life of the system.

Trane[®] Advantage VRF™ Variable Refrigerant Systems at AHR 2013



Displays EarthWise™ Systems at AHR 2013

IntelliPak[™] I Unitary Rooftop Systems — The latest Trane® IntelliPak I unitary rooftop systems, (20-130 tons), optimize energy efficiency and performance to deliver maximum customer value. The new Direct-Drive Plenum fan provides static efficiency improvements of 15-20 percent vs. traditional fan technologies. When coupled with higher efficiency refrigeration system components and system control strategies, building energy savings of up to 22 percent can be achieved.

Trane® Series S™ CenTraVac™ Chiller — The new Trane Series S CenTraVac chiller featuring AdaptiSpeed[™] technology delivers best in class efficiency, industry leading reliability and the lowest cost of ownership. Designed with replacement and retrofit applications in mind, the chiller offers a smaller footprint for easy access and installation and features several technological innovations for superior performance.

Variable-Speed Water-Source Heat Pumps – Trane® Axiom[™] variable-speed watersource heat pumps include vertical configurations as well as the newly released horizontal units - the industry's first horizontal water-source heat pumps for commercial applications. Trane variable-speed water-source heat pumps, which are among the industry's most efficient, are the only commercial units in the industry capable of full integration with building automation systems.

Trane® Wireless Comm – Trane Wireless Comm offers adherence to ZigBee[®] Building Automation Systems (BAS), the global standard for interoperable products, enabling secure and reliable wireless monitoring and control over commercial building systems. Trane Wireless Comm is the industry's first to run BACnet® protocol on top of ZigBee BAS and to be ZigBee Certified. Trane Wireless Comm provides double the signal



range of other typical systems and maximized signal strength than other wireless building automation communication systems. This means increased reliability, simplified systems design and minimized use of repeaters.

Trane® High-Efficiency Terminal Devices – Trane high-efficiency terminal devices offer flexible configurations, maximizing energy efficiency and lowering operating costs. Trane terminal devices with electrically commutated motors and single-zone VAV capability deliver reduced maintenance costs, greater efficiency, and improved acoustics, comfort and indoor air quality.

Best in Class Solutions Featured at AHR Expo

Trane also featured the following solutions at the AHR Expo: Tracer building controls, Trane HVAC parts and supplies stores, EarthWise™ chilled water systems, Performance Climate Changer™ air handling systems, Terminal unit systems, Light commercial rooftop systems, and Trane Building Services including Rental Services.

For more information, visit: http://www.trane.com/ahr-2013/.

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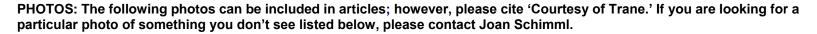
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Trane High Performance Buildings

Trane creates innovative high performance buildings using unique methodology that combines financial, operating and energy analysis with specialized service offers and available financing. High performance buildings are safe, comfortable and efficient. They meet specific standards for energy and water use, system reliability and uptime, environmental compliance, occupant comfort and safety, and other success factors. High performance buildings help owners and occupants be more productive and achieve their business missions by using design and operating standards that are created, measured and continually validated to deliver established outcomes within specified tolerances. For more information about high performance buildings, visit www.trane.com/highperformancebuildings.

About Ingersoll Rand

Ingersoll Rand (NYSE:IR) advances the quality of life by creating and sustaining safe, comfortable and efficient environments. Our people and our family of brands—including <u>Club Car</u>[®], <u>Ingersoll Rand</u>, <u>Schlage</u>[®], <u>Thermo King</u>[®] and <u>Trane</u>[®] —work together to enhance the quality and comfort of air in homes and buildings; transport and protect food and perishables; secure homes and commercial properties; and increase industrial productivity and efficiency. Trane solutions optimize indoor environments with a broad portfolio of energy efficient heating, ventilating and air conditioning systems, building and contracting services, parts support and advanced control. Ingersoll Rand is a \$14 billion global business committed to a world of sustainable progress and enduring results. For more information, visit <u>ingersollrand.com</u> or <u>trane.com</u>.



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The new Trane[®] Series S[™] CenTraVac[™] chiller featuring AdaptiSpeed[™] technology delivers best-in-class efficiency, industry-leading reliability and the lowest cost of ownership. Designed with replacement and retrofit applications in mind, the chiller offers a smaller footprint for easy access and installation and features several technological innovations for superior performance.



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Trane[®] Advantage VRF™ variable refrigerant systems featuring variable-speed compressor technology — offer individualized solutions for improved temperature control and occupant comfort in an energy-efficient package that reduces operating expenses. Variable-speed compressor technology closely matches energy use to the demands of the building, heating and cooling only the areas that require it.



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The latest Trane[®] IntelliPak™ I unitary rooftop systems, (20-130 tons), optimize energy efficiency and performance to deliver maximum customer value. The new Direct-Drive Plenum fan provides static efficiency improvements of 15-20 percent vs. traditional fan technologies. When coupled with higher efficiency refrigeration system components and system control strategies, building energy savings of up to 22 percent can be achieved. Fullload energy efficiency ratios (EERs) range from 10 to as high as 14.2, with partial-load integrated energy efficiency ratios (IEERS) which can exceed minimum industry requirements by 20-50 percent.



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Factory-installed controls on the next generation of Trane[®] IntelliPak™ I unitary rooftop systems simplify setup and operation. Each unit has a digital unit control module (UCM) that ensures accurate and reliable performance. A human interface panel (shown) provides easy access for system adjustments and monitoring.



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Trane[®] Supply commits to understanding each customer's requirements and challenges in order to provide tailored solutions to meet their unique needs and the needs of their customers and stakeholders.



Trane[®] high-efficiency terminal devices offer flexible configurations, maximizing energy efficiency and lowering operating costs. Trane terminal devices with electrically commutated motors and single-zone variable air volume capability deliver reduced maintenance costs, greater efficiency, and improved acoustics, comfort and indoor air quality.



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Trane[®] Intelligent Variable Air systems are new, efficient systems for a building's HVAC needs, saving energy, installation costs and time. With new design strategies and optimized controls, this system can deliver 20 to 30 percent better energy efficiency than a traditional variable air volume system. Customers can easily monitor efficiency with userfriendly dashboards that help to maintain peak performance for the life of the system.



[download hi-res] Trane[®] Axiom[™] variable-speed

water-source heat pumps include vertical configurations as well as the newly released horizontal units - the industry's first horizontal water-source heat pumps for commercial applications. Trane variablespeed water-source heat pumps, which are among the industry's most efficient, are the only commercial units in the industry capable of full integration with building automation systems.



[download hi-res] Trane[®] Axiom[™] variable-speed water-source heat pumps feature factory-programmed Tracer™ UC400 controls and are the only commercial units in the industry capable of full integration with building automation systems. Tracer™ UC400 controls utilize proprietary algorithms specifically designed to maximize the unique efficiency potential of onboard eFlex™ technology.



Trane[®] Rental Services delivers fast, reliable and costeffective solutions - offering temporary cooling, heating, power and compressed air systems for short-term or long-

term applications.



Trane[®] Wireless Comm facilitates wire-free network communication for building automation systems.



Dick Lemke, control sales support leader in the Americas for Trane[®], shares Trane[®] Wireless Comm at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas. Trane Wireless Comm enables secure and remote wireless monitoring and control over commercial building systems, offering adherence to ZigBee® Building Automation Systems, the global standard for interoperable products.



Performance Climate Changer™ air handling systems were one of many best in class solutions displayed by Trane® at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas. Charlie Wilkinson, product manager of Cataloged Air Handling Units for Trane, is pictured demonstrating the solution.



Trane[®] celebrates its 100 year anniversary in 2013. Visitors to the Trane booth at the 2013 International Air-Conditioning. Heating, Refrigeration (AHR) Exposition in Dallas signed a wall of congratulations.



Trane[®] displayed seven innovative, customer-driven new solutions, along with several best in class solutions, at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas.



[download hi-res] Trane[®] Building Services are demonstrated by Ryan Whittaker, marketing engineer for Trane Rental Services, at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas.



The new Series S™ CenTraVac[™] chiller, shown at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas, features AdaptiSpeed™ technology delivers best in class efficiency, industry leading reliability and the lowest cost of ownership.



Angela Puent, product manager of CenTraVac™ chillers for Trane® demonstrates the technological innovations behind the new Series S™ CenTraVac Chiller at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition



[dow Dane Taival, service, supply and contracting leader for Trane[®] North America, discussed the newest innovations from Trane at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas.



[download hi-The Trane[®] EarthWise™ chilled water systems was one of the best in class solutions featured at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas. Pictured is Ned Morris, field leader of Global EarthWise Systems for Trane.

in Dallas. Designed with replacement and retrofit applications in mind, the chiller offers a smaller footprint for easy access and installation.



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One of the new innovations displayed at the the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas was the Trane[®] Axiom[™] variable-speed water-source heat pumps. Trane Axiom includes vertical configurations as well as the newly released horizontal units - the industry's first horizontal water-source heat pumps for commercial applications.



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The latest Trane[®] IntelliPak™ I unitary rooftop systems. demonstrated here by Matt Muhlada, product manager of the large unitary team in Trane Clarksville, optimize energy efficiency and performance to deliver maximum customer value.



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The Trane[®] Light commercial rooftop system, displayed here by Mark Bell, product manager of the Light commercial unitary team in Trane Lynn Haven, was one of several best in class solutions featured at the 2013 International Air-Conditioning, Heating, Refrigeration (AHR) Exposition in Dallas.



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Trane[®] high-efficiency terminal devices offer flexible configurations, maximizing energy efficiency and lowering operating costs



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High-efficiency terminal devices from Trane® with electrically commutated motors and single-zone VAV capability deliver reduced maintenance costs, greater efficiency, and improved acoustics. comfort and indoor air quality.



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